Project Introduction

The I-Logix team proposes development of the Service Oriented Spacecraft Modeling Environment (SOSME) to allow faster and more effective spacecraft system design using a model based design process. The SOSME consists of several innovations: 1. Service-Oriented Architecture for Spacecraft System Modeling (SOASSM). 2. General-Purpose Spacecraft Reference Model (GPSRM) implementing the SOASSM. 3. Requirements-Driven Model Customization Application (RDMCA) to aid in customizing the GPSRM to reflect a specific spacecraft system design. 4. Mission Scenario Generation Application (MSGA) to aid in capturing mission scenarios and execute models developed using the SOASSM against the mission scenarios. The significance of these innovations is that they will: 1. Enable and facilitate a model based system design process for spacecraft systems. 2. Enable rapid development of spacecraft system models in support of Trade Studies. 3. Enable more effective and accurate trade studies by executing models against mission scenarios while capturing quantitative measures of performance. 4. Provide graphical and executable artifacts for use in project and peer reviews. 5. Enable system level validation against mission scenarios throughout the design process. 6. Facilitate the integration of detailed design models by providing standard interfaces for spacecraft services. 7. Facilitate Simulation Based Acquisition. 8. Enable Model Based Contracting.

Primary U.S. Work Locations and Key Partners
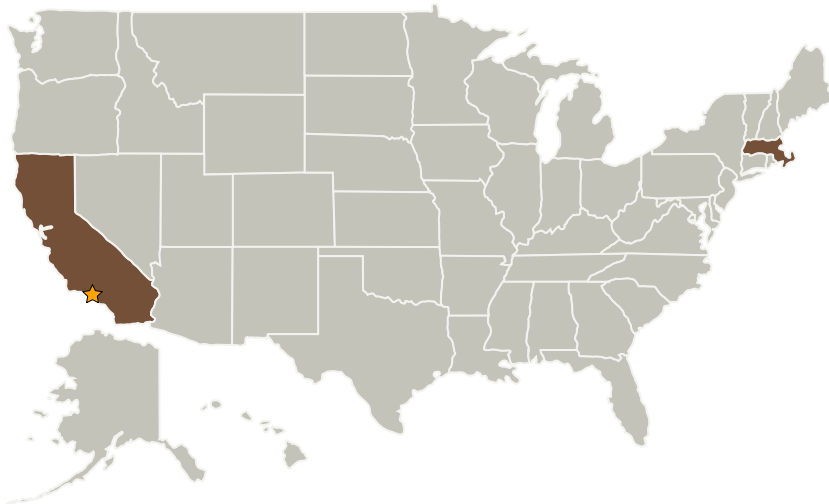

Service Oriented Spacecraft Modeling Environment, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Organizations Performing Work	Role	Type	Location
⭐ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
I-Logix, Inc.	Supporting Organization	Industry	Andover, Massachusetts

Primary U.S. Work Locations	
California	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Stephen Di Camillo

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  └ TX09.4 Vehicle Systems
    └ TX09.4.5 Modeling and Simulation for EDL